WORKING TOGETHER

THE CENTER FOR CONSERVATION BIOLOGY Annual Report 2022

CCB's ongoing mission

The mission of The Center for Conservation Biology, through all of its diverse programs, is to provide the global community with the information needed to drive thoughtful, science-based conservation, to educate and train the next generation of conservation scientists, and to make lasting contributions to the natural world through critical thinking, innovation and ground-breaking research.





ANNUAL REPORT 2022 Content by Bryan Watts Design by University Web & Design

(Front cover) Maxi Galmes from the NGO CECARA walks through a burned calden forest in Argentina. Chaco eagles are globally endangered and depend on this forest for nesting and foraging. The Center and CECARA have been working together to track Chaco eagles in an attempt to describe their life cycle and to better understand habitat requirements. *Photo by Bryan Watts*.





A MESSAGE FROM THE DIRECTOR

Our nation stands as a house divided against itself. Somewhere along the way we have lost our sense of common purpose. We increasingly view the world as a zero-sum game where every event is defined by winners and losers and the only way to give to one neighbor is to take from another. But life is not a zerosum game, and the pursuit of this world view leads only to the loss of decency and civil society. We need to refocus on goals that are more important than divisions. We need to work together to find our way back to mutual respect.

Within the conservation world, we are just people concerned about the future of species and wildness. Although we may not always agree on details, our passion for a shared purpose moves us forward. We stand together, eyes fixed on a common goal. Each success that brings us closer to that goal is not a victory for one but a celebration for all. Over time, community and commitment has become a destination unto itself.

The Center for Conservation Biology has worked with hundreds of partners on scores of initiatives over the decades. It has been an honor and a privilege to work alongside so many who have brought such unique expertise and unwavering passion to the effort. Within this report, I highlight a few of the partners with whom we have shared glories, defeats and hopes. We applaud you all. Together we have moved conservation forward.

We invite you to become a partner in conservation in your own unique way.

Sincerely,

Bryan Watts

Bryan D. Watts Mitchell A. Byrd Professor of Conservation Biology Director, The Center for Conservation Biology

A patch of high marsh at dawn along the western shore of the Chesapeake Bay. The Center has worked in hundreds of marsh patches owned by private landowners over the years. We very much appreciate the cooperation of landowners in our efforts to understand marsh birds and their challenges. *Photo by Bryan Watts*.

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FEDERAL AGENCIES

ederal agencies are charged with serving the people of a nation, developing and implementing the rules and infrastructure that make a nation work and protecting the resources that people deem to be important. In large part, federal agencies determine the fate of natural resources within their boundaries. Within the United States, the federal government manages 640 million acres and is responsible for overseeing the welfare of all species. Political influences rise and fall, issues and threats come and go, but the responsibility of federal agencies is to follow their mandate, take the long view and be a stabilizing force in resource protection. Federal biologists are some of the most accomplished scientists and managers we have in the conservation community. In the face of complex federal mandates and enormous responsibilities, federal biologists always seem to take up the charge and find ways of moving conservation forward.

The Center has had the pleasure of working with dozens of federal agencies in several countries and hundreds of federal biologists. What has been so refreshing over the years is the lack of agenda and the commitment to seeing conservation through.

Don Schwab (L) and Chris Lowie (R) walk along Sycamore Ditch in the Great Dismal Swamp National Wildlife Refuge at dawn following a release of red-cockaded woodpeckers into the refuge. The Center has worked with USFWS, VDWR and many other groups to introduce woodpeckers into the swamp in an effort to establish a new population. *Photo by Bryan Watts.*



▲ An Ipswich sparrow in winter along the Atlantic Coast. This species is a beach specialist and the network of national seashores host most of the population during the winter season. The Center has been working with National Park Service biologists to better understand the requirements of this population. *Photo by Bryan Watts.*



Fog begins to rise at dawn within the Great Dismal Swamp NWR just after release of red-cockaed woodpeckers into their new habitat. The Center has worked with USFWS, VDWR, TNC and other partners to establish a new population of endangered woodpeckers on the refuge. *Photo by Bryan Watts*.



U.S. FISH AND WILDLIFE SERVICE

The U.S. Fish and Wildlife Service (FWS) is the principal federal agency dedicated to fish and wildlife conservation employing 8,000 people, supporting eight regional offices and nearly 700 field offices. The agency manages 90 million acres including critical infrastructure for some of our most endangered species. The role of the agency is so diverse that it touches on all aspects of conservation. Among other responsibilities, the agency enforces federal wildlife laws, protects endangered species, manages migratory birds, restores significant fisheries, conserves and restores wildlife habitat and helps foreign governments in international conservation efforts. The agency works with many other groups to promote habitat conservation and species protection on corporate and private lands.

The U.S. Fish and Wildlife Service is The Center's closest federal partner. We have conducted hundreds of initiatives together, have worked on dozens of wildlife refuges and are in touch with service biologists on a weekly basis. Our work together has ranged from smallscale research projects that inform local management decisions to the development of national policy to hemispheric-scale conservation initiative focused on migratory species. We share a passion and dedication to conservation. A common characteristic of service biologists is their understanding that the service plays a central role in the long arc of conservation.

◀ Craig Koppie repelling down to a peregrine eyrie in Millville Quarry to band young. A FWS biologist, Craig has worked with raptors and The Center since the 1970s. He exemplifies the passion of many federal biologists for conservation. *Photo by Bryan Watts.*

Pam Denmon with a young American oystercatcher on Fisherman Island National Wildlife Refuge. The Center has worked with the FWS and many other partners with oystercatchers along the barrier islands including studies on Fisherman focused on low reproductive rates. Pam represents many refuge biologists who are passionate about the species under their care. *CCB photo*.



NATIONAL PARK SERVICE

The National Park Service (NPS) is charged with preserving the crowned jewels of our nation and making them accessible to the public. The United States has a wealth of natural, cultural and historic resources that represent important pillars of our national identity. Many of these resources have been put under the care of the 20,000 employees of the National Park Service. The Service manages 85 million acres divided into 423 units. Regardless of their individual missions, most of these properties have conservation value and the service takes this responsibility very seriously. Conservation work generally follows two objectives: restoring species and ecosystems to their natural state where appropriate and incorporating units into broader networks to achieve larger conservation objectives.

The National Park Service has always been a gracious partner to The Center – always eager to move conservation forward. The Center has worked with dozens of service biologists on a wide range of conservation problems, from local management issues to large national initiatives. Service units receive more than 300 million visitors per year. The dual responsibility of caring for resources and public access is easily seen in service biologists who are some of the best educators in conservation. There are few things more satisfying than listening to a park biologist sharing their enthusiasm about the natural world.

◀ Rolf Gubler (NPS biologist) and Marian Watts transporting peregrine falcons to the hack box on Franklin Cliffs within Shenandoah National Park. The National Park Service has been an incredible partner in helping to re-establish peregrines in the southern Applachians since the 1980s. *Photo by Bryan Watts*.



▲ Elaine Leslie (C) Chief of the NPS Biological Resource Management Division helps Bart Paxton (L) and Marie Pitts (R) collect blood from a bald eagle on park service lands. The Center has worked with NPS on many projects over the years including monitoring bald eagles for contaminants. *Photo by Bryan Watts*.

Ipswich sparrow crew on Assateague Island. The National Seashore on Assateague is the center of abundance for Ipswich sparrows during the winter along the Atlantic Coast. The Center has been working with National Park Service biologists on Assateague to understand the winter ecology of this specialist. *Photo by Bryan Watts.* \blacksquare



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▲ John Paul (C) checks a bald eagle map within a Vietnam War era Huey helicopter during an eagle nest survey on Aberdeen Proving Ground. The Center has partnered with DOD biologists to study eagles on Aberdeen and several other military facilities within the region. *Photo by Bryan Watts.*



U.S. DEPARTMENT OF DEFENSE

The U.S. Department of Defense (DOD) is charged with functions related to national security. DOD is the largest employer in the world with more than 2.8 million personnel including active military, National Guard/ reservists and civilians. DOD controls 30 million acres of installations managed primarily for military training and testing. The primary mission of these lands is force readiness. Many of the lands controlled by DOD have very high conservation value and represent a significant part of the federal green infrastructure. One of the great challenges for biologists working with DOD is to find the right balance between the military mission and conservation of natural resources.

Managers of DOD lands have always been innovative partners for The Center, looking for inventive ways of getting the most conservation value from lands while supporting the military mission. The Center has worked with biologists on dozens of DOD lands to find solutions to a wide range of conservation problems. These biologists work daily with an ever-changing set of compliance issues, but still maintain a passion for finding ways to improve conditions for species of concern and also for fitting these lands into broader initiatives. Within many urban settings, DOD lands are critical islands holding the line for many species.

◀ Bryan Watts holds an adult bald eagle before release on Patuxent Naval Air Station. The bird was fitted with a GPS transmitter to examine movement patterns around the airfield. Biologists from The Center have worked with biologists from several military installations to learn how eagles may fit into the ongoing military mission. Photo by Bart Paxton. (Opposite page) Seth Berry with young bald eagle on Indian Head Naval Support Facility along the Potomac River. The Center has partnered with DOD to study many birds on military facilities within the region including bald eagles. DOD biologists are very effective balancing wildlife management with the military mission. *Photo by Bryan Watts*.

STATE AGENCIES

tate and provincial agencies have a mandate to follow their mission and serve the people within their jurisdiction. Most state resource agencies were formed in the early 1900s to enforce game laws and manage fish and game populations. During the 1970s, most of these "hook and bullet" agencies expanded to assume responsibility for nongame species and began to focus on the management and recovery of species that were of high conservation concern. In a very practical sense, these agencies would over the next 40 years become the front line of conservation. They would not only focus on the health of populations within their states but work together to tackle largescale conservation goals.

The Center has had the opportunity to work with dozens of state and provincial agencies across the Western Hemisphere. Biologists working for these agencies are extremely knowledgeable about species of conservation concern and what challenges they face within their jurisdiction. These biologists are very effective in managing populations within their state but also partnering with federal and state biologists to achieve large victories.



Steve Mcininch (L) and Dave Hopler (R) from Virginia Commonwealth University collect prey remains within a brown pelican colony in the Chesapeake Bay to better understand diet. Colonial waterbirds are important indicators of ecosystem health. A great community of partners has worked together with these species since the 1970s. *Photo by Bryan Watts*.

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Mixed heronry on the Eastern Shore of Virginia. The Center, VDWR, TNC and USFWS have worked together since the 1970s to monitor populations of colonial waterbirds in Virginia and to conduct management and research when needed. *Photo by Bryan Watts*.

VIRGINIA DEPARTMENT OF WILDLIFE RESOURCES

The Department of Wildlife Resources (DWR) is the lead agency responsible for wildlife in Virginia. The agency has a sprawling set of responsibilities including enforcing fish and wildlife laws, managing wildlife and inland fisheries, safeguarding nongame species, administering recreational boating and reaching out to educate the public about the outdoors. The agency supports hundreds of employees and manages more than 200,000 acres of habitat that support wildlife conservation and recreation. The first dedicated nongame biologist was hired in the early 1980s. Since that time, conservation of nongame species has become a major theme and the agency now supports dozens of biologists working to secure the future of these species. Biologists within the agency are extremely knowledgeable and dedicated to conservation within and beyond state boundaries.

For more than 50 years, the DWR has been The Center's closest conservation partner. Together we have worked on hundreds of initiatives and worked side by side for the cause of conservation on a daily basis. We have worked together on all endangered bird species, set priorities for conservation programs, worked in the field to answer dozens of critical questions and have determined where Virginia fits into the life cycle of many species of broad concern. We have worked closely with multiple generations of biologists and have been inspired by their craft and commitment to the mission of conservation.

A mixed CCB and VDWR team return to a boat in Chincoteague Bay after surveying a mixed heronry. The Center and VDWR have worked together for 50 years to monitor and manage species of concern in Virginia. VDWR has been The Center's closest partner through the years. *Photo by Bryan Watts.* 🔻



Adult female peregrine falcon on a bridge in Virginia. Bridges support one third of falcon pairs in Virginia and VDOT has played a significant role in their recovery. The partnership between VDWR, VDOT and The Center has worked to accommodate peregrines and operations on bridges. *Photo by Bryan Watts.*



STATE AGENCIES

VIRGINIA DEPARTMENT OF TRANSPORTATION

The Virginia Department of Transportation (VDOT) is responsible for building, maintaining and operating Virginia's roads, bridges and tunnels and provides funding for airports, seaports, rail and public transportation. The agency maintains the third largest state road system in the country, including more than 60,000 miles of roads and 21,000 bridges. Although VDOT's mandate is transportation, their infrastructure has conservation value and their daily decisions have implications for birds and other wildlife. The primary responsibility for biologists within the agency is compliance – making sure that operations adhere to wildlife and environmental regulations.

The Center has partnered with VDOT for more than 30 years on numerous initiatives. Collaborations have focused on highway plannings, placement of new roads, issues with bald eagles and most consistently the management of peregrine falcons on bridges. VDOT biologists have gone above and beyond their duty to consider wildlife within their operating plans. What has been most inspiring is that VDOT employees in a broad range of jobs have a keen concern for wildlife and are willing to do what they can to advance conservation.

Alvin Balderson (L), Sergio Harding (C) and Theresa Tabulenas (R) examine the Norris Bridge on the Rappahannock River for locations to place a peregrine box. *Photo by Bryan Watts.*

Brood of peregrine falcons on the infrastructure of the Benjamin Harrison Bridge. Bridges have become an important nesting substrate for peregrines throughout their range and in Virginia. The Center works with VDOT, VDWR and USFWS to manage the bridge population in Virginia. *Photo by Bryan Watts*.

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NON-GOVERNMENTAL ORGANIZATIONS

on-governmental organizations (NGOs) that focus on the environment come in all shapes and sizes with a wide range of missions, from preserving a local patch of forest or watershed to protecting habitats or bird communities on a global scale. The diversity in configuration allows NGOs to fill many conservation niches and often to focus on problems that are beyond the reach of government agencies. Many biologists who work for NGOs are some of the best in the world and they have a knack for innovation because they often have to adapt and make progress with few resources. One of the strengths of NGOs is their ability to involve the public in conservation work.

Many NGOs have been incredible long-term partners on projects with The Center. Because of our innovative spirit and drive for results, we likely have the most in common with our NGO partners. We have worked together on short-term projects focused on individual properties or large geographic projects that span decades. Throughout we have enjoyed the camaraderie with biologists whose only duty is the birds and whose only focus is the goal at hand.

> Bobby Clontz (R) and Bart Paxton (L) after capturing red-cockaded woodpecker in The Nature Conservancy's Piney Grove Preserve. The Center and TNC have worked to recover red-cockadeds in Piney Grove since the property was acquired in 1998. Photo by Bryan Watts. ▶



Shorebird crew from Panama Audubon processing western sandpipers on the Bay of Panama with Chance Hines recording. The Center has worked in the upper Bay of Panama since 1997 and Panama Audubon has been a close partner moving shorebird conservation forward. *Photo by Bart Paxton.*



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CORPORATIONS

he global economy supports millions of corporations. An ongoing consideration for many of these companies is compliance with environmental laws. Increasingly, the customers and employees that support these corporations are concerned about sustainability and the environment. Beyond compliance and consumer demands, the best companies have their own environmental ethic. They feel a duty to advance conservation. These companies are open to finding solutions that make economic and environmental sense and make great conservation partners.

The Center is always searching for corporate partners that want to make a difference. Corporations that have large land holdings are of particular interest since small shifts in management may result in large benefits to species. The Center has worked with more than 100 corporate partners to support their data needs and to find management solutions that balance operations and species needs. Long-term partners include Weyerhaeuser Corporation, Dominion Energy, ALCOA, Exelon and others. We appreciate the collaborative energy that corporations bring to the table.

▲ A commercial blueberry crop ready for harvest in New Brunswick. Oxford Frozen Foods and other corporate growers have increasingly recognized their role in supporting migrating whimbrels. The Center, Canadian Wildlife Service and Mount Allison University have worked together with growers to better understand this role. Photo by Bryan Watts.



▲ A clutch of peregrine falcon eggs in a nest box on top of a smoke stack within Dominion Energy's Yorktown power station. *Photo by Bryan Watts.*



▲ A mixed Center and TNC team work to set up for trapping whimbrels on the Eastern Shore of Virginia for a collaborative project including Dominion Energy. Corporate partners are a critical part of the conservation community and The Center has always enjoyed working side by side with corporate biologists. *Photo by Bryan Watts*. Wayne Clark from Dominion Energy helps with young peregrine falcon. Power plants have been important in the recovery of peregrine falcons. Dominion, The Center and VDWR have worked together to manage peregrines for decades. Photo by Bryan Watts. ion Energy

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PRIVATE LANDOWNERS

he majority of lands within the United States and beyond are owned by private landowners. Owners may be ranchers, farmers, hunting groups or just individuals with a need to own a patch of ground. Seventy-five percent of endangered species have eighty percent of their habitat within privately held lands. The future of the majority of these species is truly in the hands of private land holders. Most private landowners consider themselves to be stewards not just of their land but of the species that depend on it. They recognize that decisions made about land management have consequences.

There are few things more humbling than to be invited onto a property by a landowner to conduct research. The Center has worked on thousands of privately owned parcels of land. Most projects have been large in scope and involved dozens of parcels. Occasionally we have focused on individual parcels. Landowners tend to be personally invested in work on their property and are always eager to hear about findings. Sitting down and spending time talking with landowners about their land is one of the more satisfying aspects of this work.

◀ Osprey nestling on a private platform is monitored by trail cam in the Chesapeake Bay. Homeowners are very protective of their osprey pairs and The Center has been fortunate to have worked with hundreds of property owners who have shared their birds with us as we have worked on the population. We very much appreciate these landowners. *Photo by Bryan Watts.* A rancher in Argentina with a globally endangered Chaco eagle. Most known pairs of this species in Argentina occur on private ranchlands and their recovery depends on ranchers. CECARA and Center biologists have worked together to better understand the biology of this rare species. *Photo by Bryan Watts.*



A film crew works with Jeff Corwin (L) and Bryan Watts (R) on a shoot about nesting osprey for the film Expedition Chesapeake. These professionals are critical partners in educating the public about conservation issues. *Photo by Mike Ostrander*.

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▲ Film crew with Saint Thomas Production Company on the Eastern Shore to get footage and recordings of staging whimbrels. The Center partners with many media and production groups to educate the public about conservation issues. No one can engage the public better than these professional storytellers. *Photo by Bryan Watts.*



MEDIA

he collective "media" including print, radio and television journalists are essential in keeping the public informed about conservation issues. Educating the public is a critical component of most successful conservation projects and the media has played an important role. Good storytelling requires a compelling story, all the facts and highly skilled professionals capable of bringing the story to the public. Our society is fortunate to have an engaged media community that is willing to cover conservation issues.

The Center has been lucky to have worked with so many great journalists who are passionate about their craft. We have participated in more than 1,000 media stories covering a wide range of conservation issues over the past 30 years. Taking journalists out into the field to experience species or problems firsthand is the most enjoyable. It has been a thrill to involve these professionals in the action so that they are able to report from personal experience.

◀ Rex Springston (R) environmental reporter for the Richmond Times Dispatch and Mitchell Byrd (L) talk about the importance of tidal fresh portions of the Chesapeake Bay to bald eagles. Environmental reporting has been critical to conservation. *Photo by Bryan Watts.*



▲ Graduate student Alex Wilke surveys for birds along the Virginia Barrier Islands. Her graduate work focused on nesting success of American Oystercatchers. Alex is now a senior conservation scientist for The Nature Conservancy. *Photo by Connor Coleman.*

Laura Duval (R) processes and bands an Ipswich sparrow while technician Amy Whitear (M) looks on and W&M undergraduate student Olivia Popovich (L) records data. Gaining field experience is an important part of education for conservation students. *Photo by Bryan Watts.* **v**

▲ Graduate student Catherine Markham climbs a bald eagle nest tree on the James River. Her graduate work investigated the influence of salinity on diet and growth. Catherine is now an associate professor at Stony Brook. *Photo by Bryan Watts.*

Undergraduate student Jake McClain with an adult male American Kestrel. Jake worked on several projects with The Center during his undergraduate years. *Photo by Joe McClain.*



STUDENTS

tudents bring the curiosity, energy and enthusiasm that carry research forward. Although they have yet to climb the high peaks they are eager to join the journey. More than any other motivation, students of the conservation sciences want to make a lasting contribution. They do not measure success or failure by the normal metrics of society. They seek fulfillment through service to the greater good. They hold the promise of the future and they inspire us all by their passion to move mountains.

We have been very fortunate over the years to work with hundreds of talented and dedicated students and technicians who share our passion for the natural world. These students have conducted research at the highest level and have made lasting contributions to conservation. Many have moved on and found their own unique way to serve and inspire others. Decades after their work here all continue to be a part of The Center family and many continue to collaborate on a wide range of programs. We are extremely proud of the impacts they have made on the world and the people they have become.

> Graduate student Michael Academia provides menhaden to an osprey nest in Mobjack Bay. His graduate work focused on menhaden harvest policy and food stress in osprey. *Photo by Bryan Watts.*



SKILLED PARTNERS



onservation projects often require a diversity of skills to complete. When the skill sets required extend beyond the expertise of Center biologists, we depend on other industries to bring their skills to the project. Among others these include survey pilots, boat captains, arborists, tool makers, metal workers and mechanics. Many projects would not be possible without the contribution of these skilled artisans.

The Center has worked with dozens of skilled partners. Most of these people have a personal interest in conservation and have become part of the team. There is a comfort in working with professionals who you can depend on to take care of their work while we take care of ours. Most have helped in ways that go well beyond their craft. We have learned a great deal from these professionals about how to improve the approach and efficiency of various projects. The group includes more than 20 survey pilots from Argentina to Canada. We have flown more than 5,000 hours of aerial surveys with this group of professionals and they have been critical to the mission.

(Opposite page) Nate Jones in the top of a loblolly pine installing a camera above an eagle nest on the Lynnhaven River. Skilled professionals like Nate have played key roles in many Center projects. Many of these people care about species and become partners in conservation. *Photo by Bryan Watts*. Shawn Padgett (L) in bucket heading under the Norris Bridge with VDOT snooper truck operator to check on peregrine falcon brood. VDOT has been a great conservation partner providing equipment and personnel when needed. *CCB photo.* ▲ November-five-four-four-five-two, the tail number for Captain Fuzzzo Shermer's Cessna 172 that he has used to fly Center biologists for more than 30 years. Fuzzzo has been the most dedicated pilot the Center has ever worked with and his expert flying skills are what made many projects possible. *Photo by Bart Paxton.*







▲ An osprey nestling on the Chesapeake Bay. The Center's OspreyWatch project brings observations from osprey observers from around the world onto one platform. The project would not be possible without the hundreds of volunteer citizen scientists. We appreciate all of the time and effort contributed by these gracious observers. *Photo by Bryan Watts*.



VOLUNTEERS

olunteers started the conservation movement and have always played an important role in moving it forward. Each year, millions of eco volunteers around the world spend their own time and resources to help make a difference. Drawn from all walks of life, these people share a passion for maintaining the natural world. They want to contribute their time and energy toward something they can take pride in. They are the selfless heroes of conservation.

More than any of our partners, we are most inspired by volunteers. Their only agenda is to give back and make the world a better place. The Center has worked with hundreds of volunteers. Some people have had a passion for a specific project or species. Others have been interested in moving things forward by helping wherever and whenever they were needed. The Center has been fortunate to have a few "super volunteers" over the decades who have contributed day in and day out to our success. We very much appreciate all of the talents and passion of those who have contributed to bird conservation.

◀ Reese Lukei, Jr. with adult red-tailed hawk. Reese has volunteered with The Center since the 1970s mostly with raptors including running the Wise Point trapping station for more than 20 years. Reese embodies what volunteerism is all about and is a bird ambassador to the public. *Photo by Reese Lukei, Jr.* Barbara Slatcher weighs a young peregrine out on Cobb Island. Barb has volunteered with The Center for many years and has worked with peregrines, osprey, kestrels and other species. She is always willing to help wherever and whenever needed. *Photo by Libby Mojica*.

INSTITUTIONAL PARTNERS 2022

Acadia University Advanced Conservation Strategies Aluminum Company of America American Bird Conservancy American Eagle Foundation American Wind Wildlife Institute Arborscapes, LLC Arizona Bird Conservation Initiative Atlantic Coast Joint Venture Audubon North Carolina Audubon South Carolina Audubon Louisiana Avian Research and Conservation Institute Bird Studies Canada BirdsCaribbean **Boreal Songbird Initiative** Brooks Bird Club Buck Island Ranch Canadian Wildlife Service Carmeuse Lime & Stone, Inc. Center for Coastal Resources Management Chesapeake Bay Bridge Tunnel Authority Chesapeake Bay Foundation Chesapeake Conservancy Coastal Virginia Wildlife Observatory

Colorado State University Conserve Wildlife New Jersey Cornell Laboratory of Ornithology Cube Hydro Carolinas Dalhousie University Delaware Division of Fish and Wildlife **Delaware Natural History Museum** Discover the James Dominion Energy EA Engineering **EDM** International Environment Canada Exelon Corporation Florida Audubon Florida Fish and Wildlife Conservation Commission Friends of Dragon Run Friends of Rappahannock River George Mason University Georgia Dept of Natural Resources Georgia Ornithological Society Georgian Bay Osprey Society Gomez and Sullivan Engineers Good Shepherd Fund Gulf Coast Bird Observatory

Hampton Roads Bird Club Hanover Aviation Idaho Bird Observatory Illinois Natural History Survey Institute for Integrative Bird Behavior Studies James River Association Kentucky Dept of Fish and Wildlife Resources **Kissimee Prairie Preserve** Kleinschmidt Associates Laramie Audubon Louisiana Fish and Wildlife Low Country Institute Luck Stone Corporation Maine Dept of Inland Fisheries and Wildlife Maine Natural History Observatory Manomet, Inc Martha's Vineyard Raptor Research Maryland Dept of Natural Resources Maryland Ornithological Society MathScience Innovation Center Michigan Audubon Michigan Dept of Natural Resources Michigan Natural Features Inventory Microwave Telemetry, Inc Midstream Technology, LLC

Midwest Coordinated Bird Monitoring Partnership Mississippi Museum of Natural Science Mississippi State University Mount Allison University Movebank National Aeronautics and Space Administration National Audubon Society National Fish and Wildlife Foundation National Park Service New Hampshire Audubon New Jersey Audubon New Jersey Conservation Foundation New Jersey Division of Fish and Wildlife Norfolk Southern Corporation North Carolina Wildlife Resources Commission Northern Neck Audubon Society Northern Virginia Conservation Trust **Ohio Dept of Natural Resources Oklahoma State University** Panama Audubon Parks Canada Partners in Flight

Pennsylvania Game and Fish Commission

Progress Energy Richmond Audubon **Richmond Times-Dispatch** Richter Museum of Natural History Santa Rosa Ranch Smithsonian Institution Smithsonian Tropical Research Institute Solertium Corporation South Carolina Dept of Natural Resources Southern Company Southern Illinois University State University of New York Tennessee Ornithological Society Tetra Tech, Inc Texas Parks and Wildlife The Carolina Bird Club The Nature Conservancy The Peregrine Fund The Wildlife Center of Virginia Toronto Ornithological Club Three Lakes WMA United States Army Corps of Engineers United States Coast Guard United States Dept of Agriculture United States Dept of Defense United States Fish and Wildlife Service

United States Forest Service United States Geological Survey Universidad de La Pampa, Argentina University of Connecticut University of Delaware University of Georgia University of Maine University of Maryland University of Moncton University of Queensland University of Rhode Island University of Virginia Virginia Academy of Science Virginia Aquarium Virginia Coastal Zone Management Program Virginia Dept of Conservation and Recreation Virginia Dept of Environmental Quality Virginia Dept of Mines, Minerals, and Energy Virginia Dept of Transportation Virginia Dept of Wildlife Resources Virginia Institute of Marine Science Virginia Marine Resources Commission Virginia Master Naturalists Virginia National Estuarine Research Reserve Virginia Outdoors Foundation Virginia Society of Ornithology

Vulcan Materials Company West Virginia Dept of Natural Resources West Virginia University Whitaker Center William & Mary Williamsburg Bird Club Williamson Ranch Wisconsin Bird Conservation Initiative Woods Hole Group, Inc XL Ranch Xponent 21, Inc

(Back cover) Sun rises over a marsh along the Chesapeake Bay. Chesapeake saltmarshes are critical to several species of marsh birds and most are privately owned. The Center has been fortunate to work with hundreds of landowners who have been very engaged and excited to have us on their properties. *Photo by Bryan Watts.*





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